भारतीय मानक

Indian Standard

IS 14136 : 2023

पैकेज मधुमक्खी पेटी — विशिष्टि

(पहला पुनरीक्षण)

Package Bee Box — Specification

(First Revision)

ICS 67.260

© BIS 2023

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
मानक भवन, 9 बहादुर शाह ज़फर मार्ग, नई दिल्ली - 110002
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI - 110002
www.bis.gov.in www.standardsbis.in

October 2023 **Price Group 4**

Apiary Industry Sectional Committee, FAD 03

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Apiary Industry Sectional Committee had been approved by the Food and Agriculture Division Council.

Beekeeping in modern hives is practiced all over the country wherever suitable flora is available, and at many other places where bee flora is insufficient, the beekeepers, particularly practicing melliferous beekeeping, are undertaking migratory beekeeping. It has been proved beyond doubt that cross pollination in agri-horticultural crops increase the yield many fold and the honey bees are very effective crops pollinators. Therefore, the demand for the bee colonies from the beekeepers for honey and wax production and from the farmers to effectively cross pollinate their crops is increasing day by day. With normal hive, it is cumbersome to get the colonies shifted as per the requirements of the beekeepers and farmers. Therefore, standardization of a simple box to transport the bee colonies from one place to another particularly for commercial (sale) purpose is very important.

This process of transporting bee colonies with the hives involves heavy expenditure. Secondly, the bee breeder or the beekeeper who want to sell their bee colonies cannot afford to sell them along with the combs and hives every time. Similarly, a beekeeper or an orchard owner who desires to purchase bee colony cannot afford to pay for the combs and hives also every time and he already might have the hives and combs. Else, the buyer may purchase the normal hives separately from nearby. Further, carrying bees in some simpler box without combs would also reduce the bulk and weight of the consignment and all the more, the spread of bee diseases through combs would also be little. This kind of trade will also ensure the purchaser the right quantity of bees supply worth his payment as the bees will be supplied on weight basis rather than on combs basis. Thus, in order to save unnecessary transport of bee colonies in normal hives to and fro every time, it is economical for both the buyer and seller of bee colonies to have a simple and cheap package bee box to transport a queen with few thousands of worker bees (on weight basis) from one place to another. Such package bees can also be used in making the colonies strong during honey flow season, for augmenting the number of colonies and also for keeping the bees wherever they are required to effect bee pollination.

This standard was originally published in the year 1994. This revision has been taken up to keep pace with the latest technological developments and international practices.

In this revision the following major changes have been incorporated:

a) The dimensional requirements have been updated as per latest practices;
b) Figures of package bee box and its different components have also been incorporated for better comprehension; and
c) Storage and handling requirements have been incorporated.

Apart from the above, the standard has been brought out in the latest style and format of the Indian Standards.

The composition of the Committee responsible for the formulation of this standard is given in Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 2022 ‘Rules for rounding off numerical values (*second revision*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

PACKAGE BEE BOX — SPECIFICATION

(First Revision)

1 SCOPE

1.1 This standard prescribes the dimensions and other requirements of package bee boxes.

1.2 These boxes are designed in such a way so as to carry only a queen and cluster of honey bees from one place to another, providing adequate ventilation, food and protection.

2 REFERENCES

The standard given below contain provisions which, through reference in this standard, constitute provisions of this standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreement based on this standard are encouraged to investigate the possibility of applying the most recent editions of this standard.

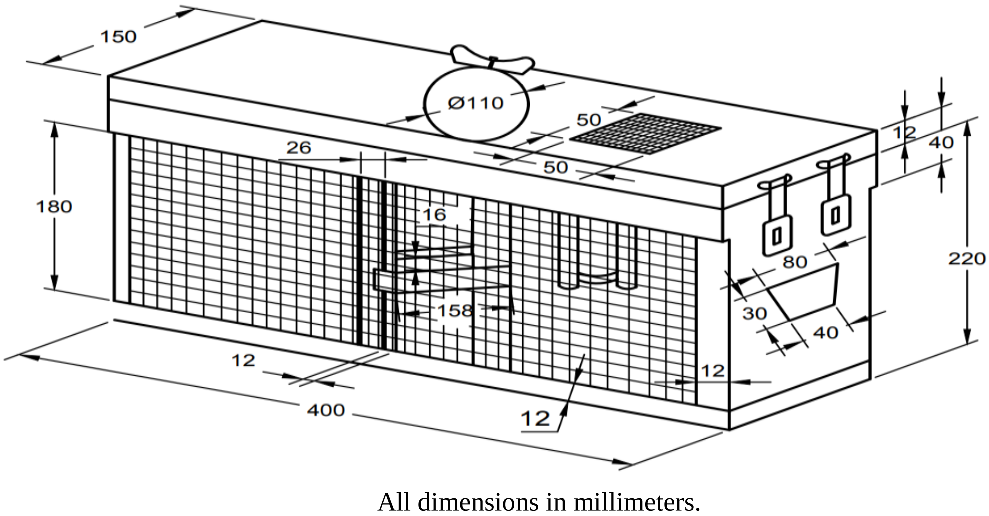
IS No.	*Title*
IS 399 : 1963	Classification of commercial timbers and their zonal distribution (*revised*)

3 TERMINOLOGY

3.1 Package Bee Box — It is a rectangular box of six sides of which the two longest sides are fitted with thin bee proof wire gauze and the rest of the four sides are covered with wooden planks of 12 mm thickness (*see* Fig. 1). The top plank is openable with hinge attached to the width/smaller side. The joints of the planks are nailed together firmly. In the top plank, there is a round hole to accommodate a tin of feeder (*see* Fig. 2) and a slit to accommodate a queen cage. Funnel is used for shaking bees into the package bee box. The funnel shall be of 20 cm to 25 cm diameter.

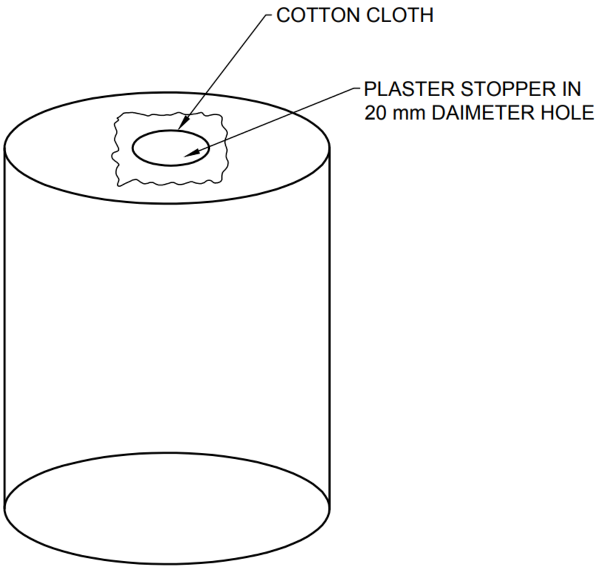
3.2 Feeder Can — Can is filled with 50 : 50 sugar syrup and covered with lid ensuring it spillage-tight. Feeder can is placed upside down on the horizontal bar of ‘H’ shaped wooden support fixed in the center of the box, nailed to the box bottom. The feeder can has 20 mm diameter hole in the center of the lid which is plugged with plastic stopper with long cloth underneath it with the margins of the cloth coming out of the hole (*see* Fig. 2 and 3) that will get wet with sugar syrup through seepage which bees will lap during transit.

3.3 Queen Cage — It is a small cage used to confine the queen along with very few worker bees from the package bee box for her protection while on transit and easy to locate while transferring the bees to regular hives. After filling the package box, the caged queen is hung by a metal tab attached near one end of the queen cage which is inserted in a slot in the top of the package box (*see* Fig. 4) and is bent over to secure the queen cage on a support provided near the feed can. The feed can is then dropped into place.



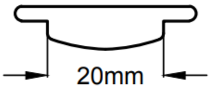
All dimensions in millimeters.

FIG. 1 PACKAGE HIVE (1.5 kg CAPACITY)



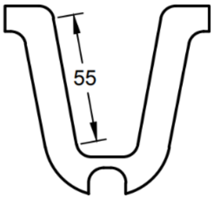
All dimensions in millimeters.

FIG. 2 FEEDER FOR PACKAGE HEIR



All dimensions in millimeters.

FIG. 3 PLASTIC STOPPER FOR FEEDER



All dimensions in millimeters.

FIG. 4 SUPPORT FOR QUEEN CAGE

4 GENERAL REQUIREMENTS

4.1 Material

4.1.1 *Wood*

Well seasoned timber, such as teak (*Tectona grandis* Linn.), piney (*Hardwichia pinnata* Roxb.), pine (*Pinus roxburghii*), *kail* (*Pinus wallichiana* A.B. Jacks) and toon (*Cedrela toona* Roxb.) (*see* IS 399) shall be used.

4.1.2 *Storage and Handling*

Package hives should be stored in a room or underneath a shed on hive stands to protect these from damage by water, termite and rusting of wire gauze, hinges, etc. Bee packages should be handled carefully to avoid any leakage of honey bees and spillage of feed during preparing and transporting bee packages.

4.2 Dimensions

All dimensions stated in this specification shall be regarded as finished dimensions and shall be measured after the compilation of finished operations such as planning and sand papering.

4.2.1 *Size of the Package Bee Boxes and the Queen Cage*

Depending upon the strength of the colony, that is, the number of bees along with queen to be transported and the climatic condition of the locality; and in order to provide adequate ventilation to the bees according to their size and strength, package bee boxes shall be of following sizes:

a) 25 cm × 15 cm × 10 cm for bees (*Apis cerana*) in southern states;
b) 35 cm × 15 cm × 20 cm for bees (*Apis cerana*) in north hilly race;
c) 40 cm × 15 cm × 22 cm for bees (*Apis mellifera*) for 1.5 kg package bees (*see* Fig. 1); and
d) 40 cm × 15 cm × 26 cm for bees (*Apis mellifera*) for 2.0 kg package bees.

Package hives of 1.5 kg and 2.0 kg capacity can hold approximately 15 000 and 20 000 *Apis mellifera* bees, respectively.

4.3 Finish

The different parts of the package bee box particularly wooden surfaces shall have a smooth finish with the edges trimmed square and smooth. The outer side of the wooden planks shall be painted with a suitable paint for protection and long lasting of the box. The paint shall be nontoxic and shall not have any odour disagreeable to the bees. The colour of the paint may be of any choice.

4.4 Joints

All joints shall be proper and shall withstand normal use and transport. Joints of the walls shall be joined by slabbed joint firmly.

4.5 Wire Gauze

The wire gauze used for the two sides be of the galvanized mild steel of 5 wires per cm and shall be suitably annexed with side walls by hails.

4.6 Wood

Unless specified otherwise, the thickness of the wooden planks used shall be 12 mm. It shall be of well-seasoned timber (*see* IS 399).

5 PACKING AND MARKING

5.1 Packing

The package bee box shall be supplied in a complete form properly assembled. It shall be packed in such a way so as to protect the wooden as well as iron parts from damage in transit and during storage.

5.2 Marking

Each package bee box shall be legibly and indelibly marked with the following:

a) Name of the part and its size;
b) Registered trade mark, if any;
c) Batch or code number;
d) Name of the manufacturer; and
e) Date of manufacture.

5.2.1 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

ANNEX A

(*Foreword*)

COMMITTEE COMPOSITION

Apiary Industry Sectional Committee, FAD 03

Organization(s)	*Representative(s)*
Punjab Agricultural University, Ludhiana	Prof P. K. Chhuneja (***Chairperson***)
All India Coordinated Research project (Honey bee & Pollinators), ICAR, New Delhi	Dr K. M. Kumaranag
Central Bee Research & Training Institute, Pune	Shri R. K. Singh
Central Food Technological Research Institute, Mysuru	Dr R. Subramanian Dr S. P. Muthukumar (*Alternate*)
Central Institute of Post-Harvest Engineering and Technology, Ludhiana	Dr Sandeep Mann Dr Guru P. N. (*Alternate*)
College of Agriculture, KAU, Thiruvananthapuram	Dr Amritha V. S. Dr Vijayasree V. (*Alternate*)
Confederation of Indian Industry, New Delhi	Ms Neha Aggarwal
Consumer Guidance Society of India, Mumbai	Dr Sitaram Dixit Dr M. S. Kamat (*Alternate*)
Dabur India Ltd, Sahibabad	Dr Richa Pritwani
Department of Entomology, Assam Agricultural University, Jorhat	Dr Mukul Kumar Deka Shri Partha Pratim Gyanudoy Das (*Alternate*)
Department of Entomology, Chaudhary Charan Singh Haryana Agriculture University, Hissar	Shri Yogesh Kumar Ms Sunita Yadav (*Alternate*)
Directorate of Marketing & Inspection, Faridabad	Shri Thangaraj Dr D. M. Govinda Reddy (*Alternate*)
Dr Y.S. Parmar University of Horticulture and Forestry, Solan	Dr R. K. Thakur
Export Inspection Council of India, New Delhi	Shri Wasi Asghar
Food Safety and Standards Authority of India, New Delhi	Ms Anju Kavi
G.B. Pant University of Agriculture and Technology, Pantnagar	Dr A. K. Karnatak
Khadi and Village Industries Commission, New Delhi	Shri Prasanta Kumar Satapathy
Mann Makhi Farm, Tungwali, Bathinda	Shri Gucharan Singh Mann Shri Deepinder Singh (*Alternate*)

Organization(s)	*Representative(s)*
National Bee Board, New Delhi	Shri B. L. Saraswat
Progressive Bee Keeper’s Association, Ludhiana	Shri Jatinder Singh Shri Narpinder Singer (*Alternate*)
Punjab Agricultural University, Ludhiana	Dr Jaspal Singh Dr Amit Choudhary (*Alternate*)
Punjab Biotechnology Incubator Agri & Food Testing Laboratory, Mohali	Dr Ajit Dua
Ramakrishna Mission Krishi Vigyan Kendra, Paraganas	Dr Chandan Kumar Mondal Dr Prabir Kumar Garain (*Alternate*)
Rubber Board, Kottayam	Shri Johnson K. G. Shri Vincent K. A. (*Alternate*)
Samanyu Honey, Doraha	Shri Jatinder Jeet Pal
Sher-e-Kashmir University of Agricultural Sciences and Technology, Kashmir	Dr Manzoor Ahmad Paray Dr Munazzah Yaqoob (*Alternate*)
Tiwana Bee Farm, Ludhiana	Shri Jaswant Singh Tiwana Shri Jasvir Singh Kahlon (*Alternate*)
VOICE, New Delhi	Shri M. A. U. Khan
In Personal Capacity (*Flat no. 15 B, Building, Sushant Co-Operative Society, Pashan, Pune-411021*)	Dr K. Lakshmi Rao
BIS Directorate General	Shrimati Suneeti Toteja, Scientist ‘E’/ Director and Head (Food and Agriculture) [Representing Director General (*Ex-officio*)]

Member Secretary
Shri Debasish Mahalik
Scientist ‘B’/Assistant Director
(Food and Agriculture), BIS

This Page has been Intentionally left blank

This Page has been Intentionally left blank

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act*, 2016 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Head (Publication & Sales), BIS.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the website-www.bis.gov.in or www.standardsbis.in.

This Indian Standard has been developed from Doc No.: FAD 03 (19984).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones: 2323 0131, 2323 3375, 2323 9402 *Website*: www.bis.gov.in

Regional Offices: *Telephones*

Central : 601/A, Konnectus Tower -1, 6th Floor,
DMRC Building, Bhavbhuti Marg, New
Delhi 110002 { 2323 7617

Eastern : 8th Floor, Plot No 7/7 & 7/8, CP Block, Sector V,
Salt Lake, Kolkata, West Bengal 700091 { 2367 0012
2320 9474

Northern : Plot No. 4-A, Sector 27-B, Madhya Marg,
Chandigarh 160019 { 265 9930

Southern : C.I.T. Campus, IV Cross Road, Taramani, Chennai 600113 { 2254 1442
2254 1216

Western : Plot No. E-9, Road No.-8, MIDC, Andheri
(East), Mumbai 400093 { 2821 8093

Branches : AHMEDABAD. BENGALURU. BHOPAL. BHUBANESHWAR. CHANDIGARH. CHENNAI. COIMBATORE. DEHRADUN. DELHI. FARIDABAD. GHAZIABAD. GUWAHATI. HIMACHAL PRADESH. HUBLI. HYDERABAD. JAIPUR. JAMMU & KASHMIR. JAMSHEDPUR. KOCHI. KOLKATA. LUCKNOW. MADURAI. MUMBAI. NAGPUR. NOIDA. PANIPAT. PATNA. PUNE. RAIPUR. RAJKOT. SURAT. VISAKHAPATNAM.

Published by BIS, New Delhi